

AVIATION

AUGUST 27, 1923

Issued Weekly

PRICE 10 CENTS



The new Gloucestershire Razor on which L. L. Carter won the Aerial Derby

VOLUME
XV

NUMBER
9

SPECIAL FEATURES

DESCRIPTION OF HANNOVER GLIDER "VAMPIRE"
LINCOLN-STANDARD LS5 COMMERCIAL AIRPLANE
THE INTERNATIONAL AIR CONGRESS, LONDON, 1923
THE CURTISS RIB TESTING MACHINE

THE GARDNER, MOFFAT CO., INC.
HIGHLAND, N. Y.
225 FOURTH AVENUE, NEW YORK

Entered as Second-Class Matter, Nov. 22, 1920, at the Post Office at Highland, N. Y.,
under Act of March 3, 1879.




Graduate Planes and Machines Presented to them with Flying Course, Curtiss Flying School, Garden City, N. Y.

EQUIPPED AND READY TO FLY

Here they are—six men who have just finished their course at the Curtiss Flying School, with the machines presented to them upon their graduation. Each one knows his plane—conditioning and assembling it, and installing the motor each one procured for himself at nominal cost, was part of the required work.

How different from the early days! Then, learning to fly meant five thousand dollars—and another five for a ship. Even since the war, though the cost of instruction has been greatly decreased, the price of the plane itself has still been beyond reach of the majority. It remains for the Curtiss Exhibition Company to offer to men interested in aviation, for sport or for business, a combination of instruction, plus equipment, at a price within the means of almost anyone.

Five Hundred Dollars for Instruction and Plane Less Motor

For details as to terms, curriculum, enrollment dates, etc.,
Write for Flying School Booklet

CURTISS EXHIBITION COMPANY
GARDEN CITY, NEW YORK.



AUGUST 27, 1923

AVIATION

VOL. XV. NO. 9

Member of the Audit Bureau of Circulations

CONTENTS

Editorials	337	The International Air Congress, London, 1923 ..	244
Description of Reconnaissance Glider "Vanguard" ..	338	Stadgag Scale Effect	247
French Biplane Contest	241	International Helicopter Trials	247
Loach-Standard L-55 Commercial Airplane	242	The Curtiss H-8 Trading Machine	248
A 30,000 Ft. Altimeter	243	Airports and Airways	249
Kelchauer Glider Trophy	245	U. S. Army and Navy Air Forces	250

THE GARDNER, MOFFAT COMPANY, Inc., Publishers

HIGHLAND, N. Y.

225 FOURTH AVENUE, NEW YORK

Subscription price: Four dollars per year. Single copies ten cents. Canada, five dollars. Foreign, six dollars a year. Copyright 1923, by the Gardner, Moffat Company, Inc.

Issued every Monday. Forms close ten days previously. Entered as second-class matter Nov. 23, 1920, at the Post Office at Highland, N. Y., under act of March 3, 1879.

THOMAS-MORSE AIRCRAFT CORPORATION

CONTRACTORS TO U. S. GOVERNMENT

ITHACA.



NEW YORK



FINE craftsmanship is not a commodity readily purchaseable in the open market.

It must have behind it a wealth of tradition, a high ideal, and a determination to live up to a worthy heritage.

Twenty years ago the builders of Wright Aeronautical Engines and Wright Planes introduced the first successful self propelled flying machines.

This Organization of engineers and builders have, ever since, given their best to the improvement and refinement of the flying art and its craft.

Until today no finer product of correct engineering practice nor wider experience in the production of engines and planes can be found in the entire field of international aeronautics.



WRIGHT AERONAUTICAL CORPORATION
Paterson, New Jersey, U. S. A.

W R I G H T

J. D. GAMBER
PRESIDENT
W. D. MIDDLE
VICE-PRESIDENT
L. D. WILSON
TREASURER
GEORGE HENNING
MANAGING EDITOR

AVIATION

LAMAR E. O'NEAL
EDITOR
VICTORIA E. CLARK
KATHARINE P. WATSON
ROBERT H. LINDSEY
CORRESPONDING EDITOR

Vol. XV

August 27, 1923

No. 9

An International Air Conference

THE American Legion is proposing to President Coolidge that he call an international conference of all nations to discuss the limitation of aerial armaments.

America has expressed its views on such a possible conference several times but a commitment at that time may be helpful to these uncommitted but well intentioned persons who are trying to prevent our development of an air defense.

Air forces, being new, are naturally considered to be a source of warfare that can be stopped at the start by eliminating from the budgets of all countries the great cost of competitive construction of huge air fleets, through some form of international agreement. The proposal set by the Washington Conference on limiting naval expansion is based upon a method of curbing air power before it gets under way.

Several classes of persons are thinking along these lines. The pacifist group that is against all war preparation is the most logical. It does not sample out any particular form of warfare but is opposed to all war equipment. These pacifists and hopeful proponents of an overruling international parliament are also apt to see the spectacular elements of air and are therefore to distrust the bureau of modern method in their efforts to rely in their support the popular mind.

The old line crowd and military officers who have a personal dislike for the new forms of combat weapons have done all in their power to prevent the growth or even the utilization of aerial equipment. They have a very real fear that the economy and efficiency of an air force may have a limiting effect on their particular specialties with resulting loss in appreciation.

And now the American Legion for reasons not yet clear is taking an active part in this direction.

That such a conference will not be called by this country is not certain as any prediction can be made. The reasons for the conference is to be based on the present status of the aerial forces of the world. France dominates Europe in the air Great Britain is planning to reach her air force equal France's strength in the air. Italy, Russia and Japan are strengthening their air forces to an extent that is not generally known in this country. All other countries are studying the problem of aerial defense and beginning to build up air forces.

The United States, where the airplane was born, has been behind in the development of the new chiefly on account of opposition of the older service. Since the war, the development has been more on the nature of studying types than a preparation for any war emergency. We have proved beyond question that American mechanical engineers lead the world in the design of military and naval aircraft. This is all as by the records which we now hold. Our pilots, too,

born on pairs in any service. But our strength ends them. Quality we have but quantity we are without.

It, therefore, must be evident that the United States is in no position to call such a conference and have the precedent of the limitation of naval armaments used to make us permanently a third rate power in the air. But the controlling reasons will not be wholly international. They will be influenced by the growing conviction that air power is the least exposure of all national equipments. When this is permitted to be demonstrated, it will then be possible to determine whether the next conference on limitation of armaments should be based on economy or disarmament.

The Night Mail A Success

THE feeling of confidence in the efforts of the night mail's night flying tests succeeding, expressed by everyone familiar with the experiment did not even temper the enthusiasm, enthusiasm of persons that has come from coast to coast. No single achievement so momentous since the beginning of the war and in filled with the promise of immediate usefulness as the practical demonstration of a twenty-eight hour schedule across the continent.

Confidence that night flight is here and awaiting the necessary funds to start it as a permanent part of our commercial transportation system. Postmaster General Fox is doing all in his power to bring the Air Mail up to its maximum usefulness. Col. Paul Henshaw and his capable staff have shown their skill in organizing the route. The pilots, as always, have done their part with the greatest enthusiasm and success. The next group to do its part is Congress. It will determine whether or not the expediting of mails by air mail is to go on to new achievements or remain as a record. Notwithstanding the general tendency to curtail appropriations, here is a service which uses the most light fitted equipment will realize that money invested in an air mail will bring great direct returns as well as a service that will be valued by every business interest and individual along the route.

It is to be hoped that the railroads will not in any selfish spirit oppose this development. The railroads have realized water transportation almost a lost art on the smaller rivers and the roads are rife of a pettiness era. Aircraft may have in the future some effect on railroad earnings but they will be so unimportant when compared to the great advantages that it will more likely lead the railroads to expand their own fast air routes. Already some of the leading railroad companies are investigating this possibility. Then, the Post Office Department will gladly turn the business over to private operation.

Pin and rubber appear to be relatively large. It was, however, observed in the wind tunnel that once with third rubber the amount of directional stability is only small.

Leading edge—Neither sliding slots nor ordinary wheels were used. Slots have too much friction; they require too much pull for starting, and cause the plane to wobble in landing. Also, they are too much, and are therefore dangerous in side landings. Ordinary wheels sink too deep into the soft snow ground which prevails at the Wammesport, and would not stand side landings either.

Thin high landing gear had to be avoided in obvious. Those that did not, resulted from almost without exception. With the absence of a propeller, there was not, really, a necessity to put the body on skids.

which was very high in the wind tunnel test. In the blown, with no wind, or V to 30 m.p.h. only, the glider started easily after from 10 to 20 ft. run, pulled by lines from its air gun. It must be considered here that it was heavier than any of the other gliders. Other gliders, of high wing loading, were not able to leave the ground at all, and the gliders which showed acceptable performance had about one-half the dead weight and consequently less strength.

Stability—The stability in flight showed with the results of the wind tunnel tests. Laterally, the airplane was very steady, especially in curves, and agreeable to control. Down it was very bad, quite the wing was appreciably unstable, in spite of its large span.

The elevator worked well. With the high ratio of span,

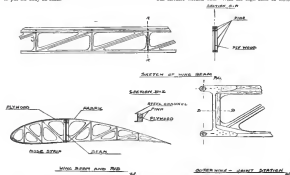


Fig. 3. Some constructional details of the Hamester glider "Vangue"

Bernard Demore's conception, the "hooked wheel", was a good solution for the problem, a half-shod leather shoe with a rubber outer sole. The inner sole rode in the hole tube, and the shoe in a sort of a metal flange. The sole in a subsegment in the body, only four inches of the bulb sticking out. Due to their spherical form, they sidestepped easily, without too much lateral resistance. One of these spindlers was run on wheels in the case of the body, and two more were run behind the center of gravity.

Experiences from 1921 Flights

The view of the dangers was put under trial during the 1921 Hamester meetings and afterwards, in September and October. The construction was well demonstrated in a bad crash, due to a faulty start, as well as the movement of the first and then the cone sideways. The mode of assembly and disassembly facilitated transport and repair. The new landing gear worked under most difficult conditions.

The aerodynamic properties were absolutely satisfactory. The sliding angle was almost the same as that of the model, and the rate of descent appeared to correspond exactly to its calculated value. The wind appeared in the maximum lift,

"Bernard Demore's glider after last flight suspended side, which worked satisfactorily."

that we had, it was very delicate, that is, immediately effective. A lower, less sensitive one would have made flying easier, but we desired immediate effectiveness to make the best use of gusts.

It is, of course, impossible then to avoid "over-controlling", but that is not necessarily dangerous. It will not prevent immediately some down air types when the lift drops and thereby under the angle of incidence of maximum lift. The model form of the center section and the wing tip section did not show this particularly, however, also, the wing tips have a lower (shallow) angle of incidence than the center wing. The theory was proven by the flights. When stalled, the glider did neither sidestep nor spin, but sank slowly as a cone.

The condition of stalling showed careful consideration in the design of gliders. Stalling is very frequent in soaring flight. Flight is difficult. It happens even to experts in gusty conditions, when a pilot's confidence wavers, and the pilot's attention is so easily distracted by other events.

Strength—Down your effort, too, more or less gradually, depending more or less slowly. It is a requirement of lift, and that the glider be able to be righted immediately. It would be wrong to sacrifice strength of wing as needed structures in order to gain a few pounds of weight. We designed the wing with a factor of safety of 3 for low speed conditions,

and both wings and controls for a factor of safety of 2.5 for the most possible during conditions. In reverse, consequently, we have not met any trouble. Speeds up to 50 m.p.h. did not do any harm, and from steep dives the glider could be righted easily.

The following tabulation shows the flights accomplished by the "Vangue" during and after the 1921 meeting. Flight No. 4 brought us the first records. No. 5 added 50 per cent to the 10 m.p.h. record, and furnished a record of 100 m.p.h. of distance. No. 10 showed for the first time the typical soaring in circles and figure eights, above the western slope of the Wammesport, and the glider was flying over the water above the starting point. This flight was the forerunner of the long 1922 flights.

SOARING FLIGHTS WITH THE "VANGUE" IN 1922

No.	Date	Duration, Min.	Distance, Miles	Rate of Rise, M./Min.	Weighted Mean Rate of Rise, M./Min.	Remarks
1	Aug. 24	14	1.00	7.1	7.1	Steady
2	"	14	1.00	7.1	7.1	Steady
3	"	14	1.00	7.1	7.1	Steady
4	"	14	1.00	7.1	7.1	Steady
5	"	14	1.00	7.1	7.1	Steady
6	"	14	1.00	7.1	7.1	Steady
7	"	14	1.00	7.1	7.1	Steady
8	"	14	1.00	7.1	7.1	Steady
9	"	14	1.00	7.1	7.1	Steady
10	"	14	1.00	7.1	7.1	Steady
11	"	14	1.00	7.1	7.1	Steady
12	"	14	1.00	7.1	7.1	Steady
13	"	14	1.00	7.1	7.1	Steady
14	"	14	1.00	7.1	7.1	Steady

The distance is given from starting to landing place, correct to within 10 ft. The rate of rise is the average rate of rise during the flight. The rate of rise is the average rate of rise during the flight. The rate of rise is the average rate of rise during the flight.

The Improved "Vangue"

Through the "Vangue" had met our expectations, we used the water to refine a few details. It ought to be mentioned that it had been constructed within six weeks only, and had been completed after the meeting had passed. The first flight took place on the second last day of the meeting.

An idea which had not been worked out before the meeting was a flexible flap instead of the hinged aileron. By a temporary series of control experiments, a mechanism was developed which would deflect the trailing edge near the wing tip, from inside. All cables and levers are made the wing tip, instead of by the usual stick, and is so easy as with the hinged aileron.

The main advantage of this device is that it avoids the old and the sharp edge along the flaps. In every position this flap follows a smooth curve. A consideration of the large percentage of the total drag which the section drag forms in a good glider, it is easily understandable how important this change was for the performance.

The following list shows the flights which were performed during the 1922 Hamester meetings.

SOARING FLIGHTS WITH THE "VANGUE" DURING THE 1922 MEETINGS

No.	Date	Duration, Min.	Distance, Miles	Rate of Rise, M./Min.	Weighted Mean Rate of Rise, M./Min.	Remarks
1	Aug. 24	14	1.00	7.1	7.1	Steady
2	"	14	1.00	7.1	7.1	Steady
3	"	14	1.00	7.1	7.1	Steady
4	"	14	1.00	7.1	7.1	Steady
5	"	14	1.00	7.1	7.1	Steady
6	"	14	1.00	7.1	7.1	Steady
7	"	14	1.00	7.1	7.1	Steady
8	"	14	1.00	7.1	7.1	Steady
9	"	14	1.00	7.1	7.1	Steady
10	"	14	1.00	7.1	7.1	Steady
11	"	14	1.00	7.1	7.1	Steady
12	"	14	1.00	7.1	7.1	Steady
13	"	14	1.00	7.1	7.1	Steady
14	"	14	1.00	7.1	7.1	Steady

We feel that the Hamester meetings have brought an advance in aerodynamic science. The "Vangue" represents the best of a certain type of glider. If, of course, the glider is to be used to come, will show better performance and will, in fact, have more or less different shape. New ideas will be incorporated, which partly we do not yet even dream. However, we were very much pleased with the number of problems which arose from our departures from conventional practice. We were just so far that we could see the dangers and the

French Seaplane Contest

The national seaplane competition sponsored by the French air department took place last week, and consisted of two distinct events. First, there will be a trial to be known as "sea-plane" from Saint Raphael to Biarritz, Texas, with an obligatory landing at Ajaccio, Corsica, and return to Biarritz, near Marseille. The second event is a trial to be known as "sea-plane" from Saint Raphael to Biarritz, Texas, with an obligatory landing at Ajaccio, Corsica, and return to Biarritz, near Marseille. The trial to be known as "sea-plane" from Saint Raphael to Biarritz, Texas, with an obligatory landing at Ajaccio, Corsica, and return to Biarritz, near Marseille. The trial to be known as "sea-plane" from Saint Raphael to Biarritz, Texas, with an obligatory landing at Ajaccio, Corsica, and return to Biarritz, near Marseille.

where P is the weight in kilograms, V is the speed in km/hr, and W is the total horsepower. The value of the "weight" is obtained from the formula $P = \frac{150 + W}{150 + W - 300}$

where Q is the useful load carried, when fuel, oil, water and man, including a crew of two men, a propeller, an engine, landing and handling gear, necessary cables, very light, a white light, and radio apparatus. This load must not be less than 225 kg. The speed V will be counted on the basis of the time elapsed between take-off and landing, and the total horsepower W will be counted according to the rating of the Service Technique.

The winner will receive a prize of F. 100,000, the second placed a prize of F. 20,000, and the third placed a prize of F. 10,000.

The second event of the competition will be a seaplane contest under the rules of the Ministry of Marine, in which pilots will be given 1000 square meters of seaplane, and sailing for points land, maneuverability. The machines competing in this event must answer certain type requirements, the following being indicated: high seaplanes and three-water landing seaplanes, which must be of the flying boat type, three-water seaplanes, which must be of the flying boat type, three-water seaplanes, which must be of the flying boat type.

Planes of the high wing, landing and take-off type, in color to be placed, must never enter one of the 100 feet of the "sea race" across the Mediterranean Sea in a two-day flight.

The constructors of the types winning in each class will be rewarded by the government plane with each an order of F. 1,000,000, which amount does not include the price of the power plant.

Ten entries have been received for this competition, as follows: two twin-engine flying boats each from Lord & Oliver, two twin-engine flying boats each from C.A.M., two flying boats from Scherer (P.E.A.), and one each from Bissini and from Bissini.

New Belgian Light Plane

An interesting light plane of Belgian manufacture, the "Pilot" has been put on the market by the Belgian Ministry of the Air. The "Pilot" is a high wing cantilever monoplane fitted with a 10 hp. Anzani engine. The weight of the machine empty, but with 18 kind of fuel, is 100 kg. In the flying trials the machine showed, under full load, a 35 hp./hr. and the power loading 33 hp./hr. Maximum speed is 40 km/hr., cruising speed 30 km/hr., maximum flying speed 40-45 km/hr., and landing speed 15 km/hr. In the flying trials the machine climbed 1200 ft. in 35 sec. without any difficulty.

It may be added that this little ship is extremely pleasing in look, being probably the prettiest light plane yet built.

Encouraging Records

The French air department after two years of F. 50,000 ask to the French manufacturer who will sell before Dec. 1, 1924, the world's maximum speed and duration records now held by American pilots.

The Curtiss Rib Testing Machine

Improved Wing Testing Method Now Available
to Other Manufacturers

Believing that the present method of statically testing airplane ribs could be greatly improved, the Curtiss Aeroplane and Motor Co. of Garden City, N. Y., has built and thoroughly tried out a machine for this purpose. The apparatus is now available for use by manufacturers and experimenters who have work of this nature to perform.

The accompanying illustration gives a general idea of the construction of the machine.

The capacity of the machine relative to the size of the rib that can be tested allows a chord length of 180 in. and a

Camberline ribs such as those of control surfaces are mounted on the verticals at either end of the machine and the loads applied as explained above.

Many Advantages of Method

The advantages of testing ribs by this method over other methods commonly in use are numerous—

- (1) Any type of rib may be tested, be it from wings, tail surfaces or control surfaces.
- (2) Where several ribs of one kind are to be tested the



General view of the Curtiss wing rib testing machine

maximum deflection at about 30 in. Any reasonable wing loading with its accompanying factor of safety is easily provided for.

The supports for the ribs are so constructed that the ribs may easily be placed and at the same time be free to rotate about its beam center. The vertical guides, to prevent undue transverse deflection, are adjustable in the direction, allowing a maximum opening of 1 in. In length of the rib and a variation of 5% to 10% in transverse.

The loads which may be varied as desired are applied by means of sliding steel ribs mounted on graduated lever arms, the arrangement being such that the loads are moved simultaneously by means of a hand wheel located at one end of the machine. The load is applied to the rib by vertical rods provided with shoes at the ends where they come in contact with the rib. The length of the rods is adjustable to allow for the deflection of the test specimen. The direction of the loads is easily reversed as to the nose of the nose load in a high speed condition, by simply extending the lever arm on the other side of the machine. The nose are released at the start of the test by means of sliding load counter weights. The effect of a uniform load is obtained as nearly as possible by varying location of the loading arms and the use of distributing blocks under the shoes.

while job may be done very quickly which gives the desired results at a minimum cost.

(3) As it is necessary to weigh out only one set of loads no matter how many factors are required, economy of weight is obtained, and therefore efficiency.

(4) The machine is very simple and easy to operate during the test which allows the attention of the operator to be concentrated on the rib.

(5) Owing to the simplicity of the rib while in the machine, the features are easily detected and due to the shape on the weight arms the rib is not completely destroyed after the initial failure as is the case with some methods.

(6) The loads are applied simultaneously, thus simulating as closely as possible actual loading conditions.

(7) Perhaps one of the most unique features of this method is the opportunity it offers in the case of weaker ribs of changing the strength of the ribs while it is being tested. For example, suppose that a rib is found to be considerably over-strength, then may cut down the section of the diagonal, verticals, or ribs while the rib is still in the machine. Thus we may practically design the rib while under load.

(8) The severe loads may be easily applied without ribs complicated or bothersome apparatus such as pulleys, etc.

AIRPORTS AND AIRWAYS

This Department is concerned with all civil flying activities such as the establishment of airports, the marking of airways, measures to secure regarding obstructions, experience gathered on flying routes and landing fields, the work of commercial aviation companies and private firms, the formation of new air transport enterprises, personal paragraphs of general interest, etc.

Communications in this effort, addressed "Airport Editor, Aviation, 225 Fourth Ave., New York City," should be brief, accurate and to the point. They should deal with facts, not with theories or speculations. While American civil flying activities will naturally be given prominence, communications will also be welcomed from Canada, Mexico and other parts of the Western Hemisphere. EDITOR.

Detroit Air Board Election

At an organization meeting held by the Detroit Air Board Apr. 8 in the Board of Commerce building, permanent officers were elected, and C. Goodine Edgar, chairman, was authorized to issue a questionnaire to study proposed plans for use of more permanent airports.

The Detroit Air Board is a federation of aeronautical, civil, military and engineering organizations for the sake of consolidating their efforts toward making Detroit the country's aviation center.

The following officers were elected: Chairman, Gen. C. Goodine Edgar; first vice-chairman, Gen. Edward G. Heikel; representative of parks and landscaping, Gen. Van Orman; W. H. Harniss, secretary; W. A. Miles, treasurer; C. W. Zimke, governor; Robert D. Widling and Harold H. Edwards, representing the Detroit Aviation Society; J. M. Moore and V. M. Deane, representing the Veterans of Foreign Wars; John F. Rook, representing the American Legion; Louis D. Egan and Joseph A. Morris, representing the City; Edith Hildebrandt and William H. Bond, representing business and industry; Robert H. H. Frick, representing the newspaper; John W. Smith, representing the postoffice; C. F. Belden and Roland Rault, representing the Automobile Agency; Edw. J. G. Vincent and William T. Harniss, representing the Standard Motor Car Co.; James E. Egan and Albert C. Green, representing the Veterans Club; Ad. Webb and Paul H. King, representing the Rotary Club; Eugene B. Wilson and Gen. E. Reddy, representing the Exchange Club; Edith H. Bond and William H. Bond, representing the Ford Motor Co.; A. A. Meyer, representing the Associated Technical Societies of Detroit; H. H. Allen, representing the Aviation Country Club; L. M. Kasse, representing the Marine National Guard; Francis Sauer, representing the Reserve Officers' Association; E. L. Moore and J. O. Rankin, representing the Reserve Air Service; Harry J. Campbell and George Walbridge, representing the Detroit Board of Commerce; W. H. Harniss and C. H. Harniss, representing the C and I Club; C. E. Egan, representing the Detroit Flying Club.

Howard E. Collins was made honorary chairman.

Helicopter Performance

PIERRE PASSEUR, the designer of the helicopter bearing his name, is continuing his experiments at Issy-les-Moulineaux, near Paris, with marked success. He is now producing a helicopter, known as "Le Hélicoptère," a small machine, fitted for the 15,000 franc prize offered by the Aero Club of France.

Some noteworthy performances of the Pasqueur helicopter include a straight flight of 180 ft. length, another of 400 ft. and a circular flight of 500 ft. in circumference, with the machine landing in a circle of less than six diameters from where it took off.

The trials of the Ouhelou helicopter are also proceeding satisfactorily, a hovering flight of 5 min. 30 sec. having recently been accomplished before representatives of the French air department.

The Largest Airplane Type

Probably the largest airplane type ever built was produced by the Hawker Tyne, Hawker Co., the Hawker Tyne, and are shown in the accompanying illustration. These twins, which support a load of 15,000 lb. each are 54 in. by 32 in.,



Giant five, one of seven built by the Hawker Tyne & Hawker Co. for the Hawker Tyne.

with smooth trends, and are suited to 70 lb. air pressure. The Hawker Tyne, which weighs approximately 44,000 lb. and the landing gear which must carry the same weight is equipped with seven tires of the type shown described.

"Chowch" Passes 50 hr. Test

The "Chowch" engine manufactured by the Bristol Aeroplane Co., Ltd., of Bristol, recently passed the 50 hr. test provided by the British Air Ministry.

Although the schedule only called for five run test runs of 10 hr. each, under 90 per cent full power, this engine performed a continuous run of 50 hr. and developed an average of 11.5 hp. at 2,200 rpm., under 90 per cent full power. The average fuel consumption for the entire time was 9.75 gals. per hour, and the oil consumption 0.85 gals. per hour. At the conclusion of the long run the manufacturers made a further demonstration of the reliability of the plant by running it for an additional hour with wide-open throttle. The power output was 35.5 hp. at 2,200 rpm. At the completion of the test the engine was entirely dismantled and found to be in a perfectly perfect condition.

The engine is of the V-cylinder horizontal opposed type and is mounted through the medium of a belt drive, also connected directly to the crank shaft.

U. S. ARMY AND NAVY AIR FORCES

Riding the Waves in a Seaplane

According to the Lake Field Pilot Book, if you are looking for a thrill take the H6G1 and head it out to sea. There are a few veterans who have tried their hand who are around just, but even they seem to have lost their appetite for their seagull planes. It has been stated that the Navy pilots seldom try landing outside the harbor. Coming down isn't as hard as the landing and take off is very hard. The bottom sheet given in the first version you hit, you float down and immediately ask for, repeating the operation about six times.

After the maximum time has passed, you push forward on the stick, it is not necessary for you to pull back on the stick, as the ship immediately takes care of it, and when you are on the top of the hump the nose drops and you are sure you are trying to make a submarine. You bring the nose up and the ship takes immediately, taking the air again. This operation is repeated, and if you are able to resist the temptation of closing the throttle and leaving home you may take the air to stay, after the fifteenth bounce.

Model Airway Is Busy

During the month of May, 1933, 226 airplanes have passed over the Model Airway which was opened from New York to Dayton, Ohio. This is quite a startling increase in air traffic over the twelve trips made during the month of June, 1932, which was the first full month of operation.

At London, Ohio, there is in process of operation a house with a revolving roof, which will be used for night flying experiments between Columbus and Dayton.

Forest Patrol Cooperation

Officers of the Air Service will gladly co-operate with the Agricultural Department in the annual forest fire patrol are hopeful that next year's work will be provided by Congress in the representation for the Agricultural Department, instead of being taken from the shoulders of the Air Service as has been the case. Although the cost of the annual patrol last year was not more than \$100,000, this annual cost the operations of the Air Service in military aviation.

Last Col. J. E. Fether, Air Service has been designated by the War Department as the representative of the Department to confer with Roy Hensley of the Department of Agriculture in working out a plan relating to aerial forest fire patrol. Army officers hope that the advance arrangement will be for the Agricultural Department to provide the funds and the Air Service to conduct the operations.

Army Orders

Major James M. Patrick, Chief of Air Service, granted thirty days' leave in absence, effective on or about Aug. 30. First Lieut. David L. H. Smith, Chief of Air Service, Bermuda, N. Y. and Fort Ontario, N. Y. to Langley Field for duty in student officer in A. S. Technical School.

First Lieut. Clarence B. Welch, A. S. from Langley Field duty as student, A. S. School of Finance, University of Pennsylvania, Philadelphia.

First Lieut. Arthur K. McCallie, A. S. from Campden Field, Scotland, N. Y. to Mitchell Field, Long Island, N. Y.

First Lieut. Charles W. Smith, A. S. from Fairchild Air Intermediate Depot, Fairfield, Ohio, to Belling Field, D. C.

First Lieut. Philip M. Mohr, A. S., leave of absence about one month and was discharged.

First Lieut. David Sidney Smith, A. S., promoted to Captain.

See Lieut. Thomas E. Howard, 19th Infantry, from Fort Thomas, Kentucky, to Air Service Primary Flying School, Brooks Field, Texas.

Leave of absence of one month to Major Byron C. Jones, A. S.

First Lieut. George W. Pelt, William K. Fletcher, Alexander Thomas, Jr., Charles L. Moore, A. S., McCord Field, Dayton, Ohio, in Engineering School, that station, for instruction.

Use of Smoke Canisters

Former Field, Panama Canal Zone, recently returned from the Chemical Warfare Service a shipment of 100 smoke canisters of the Black II 8-4 type, a model of English manufacture. These were supplemented with 100 smoke canisters of the same type, but of American manufacture. The canisters were not also a part of crew country equipped in Panama, where as the crew of a forced landing in the jungle the crew of the boat could set up a smoke signal wherever they saw floating planes leaving about twenty, and then discuss their position. A report of these experiments is given below, as follows:

Non-removable - Canister, model, Mark II/L Type 8-4. Dimensions: Cylindrical, 8 in. tall, 3 1/2 in. diameter, weight 3 1/2 lb. English instructions.

To ignite: Pull away tape covering the top, then discharge spring steel and detached striking tube. Scratch once with nail until smoke appears. (Full discharge take one sec. or less.)

Time of burning: 4 1/2 min. 5 min. maximum. Experiments conducted with this canister on land, from airplane on land and water, on the water and in mud, indicate that it is not fooling. The smoke smoke with little heat. While the canister burns quite hot, there is little heat felt on the smoke coming from the canister. It may be used in water, the smoke smoke is pulled toward the surface and then forming the smoke. The water has a damping effect on the smoke, however.

It may be dropped on land or water from an airplane, but should not be dropped on land from a height greater than 100 ft., as there is danger of the canister splashing and there is less precision in dropping the canister brightly greater than this. It burns with a yellow smoke, visible from two to ten miles away on land, and in the water one mile away. It may be ordinarily struck with the striking tool about three times before igniting.

The smoke should be held firmly on the setting by someone at the side of the ship. If the ship is pulled too far back rather than too close the ship, or the smoke is held about one minute, but not longer, after igniting. There is the chance that it may not ignite immediately upon the first strike of the tool. Immediately upon igniting, the striking tool should be thrown away, as the smoke smoke. The smoke should be held for about ten or fifteen seconds and then dropped down on the shipboard of the lower wing. It will not set a fire on land, but it will set a fire on water. The following suggestions are made for the use of these canisters:

(1) As part of crew-country equipment. Two on each two-man, and one for each single-man machine.

(2) In case of forced landing may be used by the crew of the machine plane to indicate their position to searching planes whenever air sea view is hard overhead or nearby.

(3) In finding wind direction by flight leader upon coming into a strong field.

(4) In place of a pistol. The great danger of these smoke canisters is visible from the fact that the smoke column may be mistaken in puff by the use of a smoke shell, makes their use in place of pistol practicable, but further experiments should be made in the direction.

(5) In smoke-screening smoke, canisters should be carried only for use in case of forced landing.

Chinese Officers Visit Camp Nichols

The flying field at Camp Nichols, Rind, T. I., was recently visited several times during one week by Regular General and Colonel and Major of the Chinese Army. These officers are interested in aviation, and it is understood that they are asking a trip around the world, visiting various countries with a view to inspecting our service activities both in aerial and military. During their visit to Camp Nichols they were taken in several flights, one of which was to Camp Johnston and return. Both of these officers are very appreciative and pleasant in every way and have the personal respect of aviation at least as well as the technical.

Air Service in Hawaii "Prepared"

This is what an officer stationed in HAWAII, writing for the Lake Field Pilot Book, has to say on the state of preparation of the Air Service in the mid-Pacific Islands. The officers, himself included, who ordered to foreign duty, dropped their shoulders and decided that it would be three years out of their army career that would be wasted, and they had to make the best of it.

"Those who have been fortunate enough to be assigned to Lake Field have now decided otherwise. Nowhere in the Army does an Air Service officer get such a variety of training, take a plane before the audience it is on, a tactical exercise, simulating some maneuver for war training. The flight is always interesting. It never grows old, the sea never tires the sailor, and the weather is always perfect."

Non-commissioned officers are trained as gunners, bombardiers and radio men.

"There is not a station in the Army that could be ready for war under the Air Service. Perhaps that is why the Inspector General thought we were one of the best organizations in the Army."

1932 Observation Squadron

The members of the 1932 Observation Squadron, New York Standard Observer, started two weeks' training at Miller's Island Field, formerly the old Commodore Vandenberg farm, at New York, N. Y. on August 4. Maj. R. P. Lattimore, a former member of the Lafayette Escadrille and a corps air service officer, is the commanding officer, a commanding officer of the 1932 Observation Squadron.

The squadron consists of the air service for the Twenty-first Division and is composed of 125 enlisted men, ten crack fliers, all of whom are veterans of the World War and some of whom are distinguished men, together with other officers specializing in wireless, airplane engineering, aerial photography and machine gunners.

The daily program of the men has consisted of flying over the field with the regular army planes in the afternoon, with the observation plane only in the morning, with practice work on airplane engines and machine guns.

U. S. NAVAL AVIATION

Inflection of the ZRI Started

The inflection with which the Navy's rapid attack ZRI at Lakehurst, N. J., started on Aug. 15. It is expected that the inflection will take about five days. The ship will be filled to 45 per cent of its capacity, which is the amount to be used for service flights. This will permit the ship to ascend in two to without the gas pressure forcing any of the gas out of its tanks.

Upon the completion of the inflection the ship will be "braked" from its results and will be moved to the other side of the lagoon. The method of doing this will be to put the ship in a position to be braked by the water and will be set off by letting the water act gradually permit the ship to float clear of its cradle. The ship will be floated with its keel on a bed of air and a total of 31,000 ft. of air will be used. The first flight out of the lagoon will be made about Sept. 1.

Loss of a Reptile Mascot

The Marine aviators at Port au Prince, Haiti, regret the loss of their mascot, the "Pomarine Lunging Lizard." This reptile, which was the pride of the aviators, was considerably injured and may never return to its old life. The only flying reptile seen the days of antiquity, of prehistoric times. The mascot of the Marine was not stated.

New Way of Fueling Planes

The Marine aviators at Port au Prince, Haiti, regret the loss of their mascot, the "Pomarine Lunging Lizard." This reptile, which was the pride of the aviators, was considerably injured and may never return to its old life. The only flying reptile seen the days of antiquity, of prehistoric times. The mascot of the Marine was not stated.

Aviators on Exploring Trip

The Naval Air Station at Pearl Harbor, Hawaii, has added scientific expedition to its list of activities. Johnson's Island, a small island in the Pacific, is the site of the expedition. The expedition is led by Commander John Rodgers, U. S. N., Commanding Officer of the station. The men and planes were transported in a small tugboat.

A scientific expedition of the Department of Agriculture under Dr. Weissen, the "wild bird man", accompanied the aviators on the same voyage. Whippedoor and were landed on the island for a stay of ten days. One member of the expedition will make three or four trips to the island for further scientific work.

Commander Rodgers returned to Pearl Harbor, leaving Ensign Richard Smith, the aviation detachment to be stationed and keep the scientific company. Besides an aerial survey, an aerial photographic mission map will be made. The aerial survey for accuracy in the map is very interesting. Before the expedition is taken, a "base line" of 1000 yd. line will be laid on the island, the ends of which will be marked by white stones made of shooting 2 yd. rods and 10 ft. long. These will be placed in the ground and will be a basis for measuring distance and direction in the picture. This map will be of much value from both a navigational and scientific point of view.

Johnson's Island is of coral formation, about one half mile long and one fourth mile wide. The island belongs to the United States and is used as a reservation for sea birds, which are the island by themselves. One species of the shorebirds, however, under ground to make its nest, and these birds have long-established the island with their stone offer homes—a kind of nesting and nesting place.

COMING AERONAUTICAL EVENTS

Oct. 1-3 — National Aerial Races, St. Louis, Mo.
Last Fall — Curtis Martin Flying Trophy Race

Sept. 23 — Gordon Bennett Balloon Race, Brussels, Belgium

Sept. 28 — Schneider Maximum Aviation Trophy Race, Long Beach, Calif.

Dec. 1 — Extra close for French League competition



Trade Mark

Production Control

In the manufacture of airplanes in quantity, such as is called for in the production by this company of thirty-eight all-metal M01 machines for the Navy, it is very essential that scientific production control methods be utilized.

Not only must the time element be taken into consideration, but most careful attention must be

paid to exactness in every engineering detail and material specification.

The Martin production control system is unique in airplane manufacture. Developed during years of specialized aircraft building, it has been adapted to the exacting needs of such work. It insures the utmost in precision, speed and economy.

THE GLENN L. MARTIN COMPANY

Cleveland

Builders of Quality Aircraft since 1909